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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/894,422	06/28/2001	Michael H. Wright	EMC-00-067	6882
51576 7590 01/22/2007 EMC CORPORATION c/o DALY, CROWLEY, MOFFORD & DURKEE, LLP 354ATURNPIKE STREET SUITE 301A CANTON, MA 02021-2714			EXAMINER LIN, KELVIN Y	
			ART UNIT 2142	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE.			MAIL DATE	DELIVERY MODE
3 MONTHS			01/22/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/894,422

Applicant(s)

WRIGHT ET AL.

Examiner

Kelvin Lin

Art Unit

2142

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 28-68 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 28-68 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Detailed Action

Response to Arguments

Applicant's arguments, see Remarks from page 10 to 18, filed on Nov. 2, 2006, with respect to the rejection(s) of claim(s) 28-68 under 35 USC 103(a) as the combination of Edward in view of Nakamura have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made over Markson01 et al., (USPN No. 6714980) in view of Markson02 et al., (PGPUB 20020103889)..

Response to Amended Claims

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 28-68 are rejected under 35 USC 103(a) as being unpatentable over Markson01 et al., (USPN No. 6714980) in view of Markson02 et al., (PGPUB 20020103889).
2. Regarding claim 28, Markson01 teaches a method for managing data that may be replicated from one or more volumes of data that are part

of a first volume group on a first computer system having a first operating system (Markson01, col.5, l.64- col.6, l.4), the method comprising the computer-executed steps of:

- Discovering logical information related to the one or more volumes of data that are part of the first volume group on the first computer system and creating a map of the logical information to physical devices on the first computer system (Markson01, col. 2, l.40-50, col. 4, l.51-53, discover the information from the backup tracks, volumes and logical unit of storage);

Markson01 does not specifically teach the mapping method.

However, Markson02 teaches the following limitations:

- Creating a map of the logical information to physical devices on the first computer system (Markson02, [0109], fig. 1A) the map comprising:
 - Information identifying one or more devices associated with one or more physical volumes containing the data (Markson02, fig. 1C, [0012], [0082]); and
 - Information providing definition and structured layout of volume groups, internal logical volumes and file systems on the first computer system (Markson02, [0148]);

Using the map to create a second volume group on a second computer system having a second operating system, where the logical configuration of the second volume group is substantially identical to the logical configuration of the first volume group (Markson02, [0106], [0195], fig. 2C); and

Using the map to reconstruct on the second computer system the internal logical volumes and file systems of the first computer system and mounting a duplicate of the one or more volumes of data on the second computer system (Markson02, [0017], [0084]-[0086], in which the two different operating system Solaris/Linux are constructed for two computer system and file system).

Because knowing that Markson01 discloses the managing storage for device and logical volume is described in the Markson02, it would have been obvious to use the storage management of Markson01 in the device of Markson02. Therefore, the claimed invention would have been obvious to one of ordinary skill in the art at the time of the invention.

3. Regarding claim 29, Markson02 further discloses the method of claim 28, wherein the first and second operating system are selected from

- the group consisting of IBM AIX, Sun Solaris, or HP UX, and the computer-executed steps may be performed substantially independent of which operating system is selected from the group (Markson02, [0084],).
4. Regarding claim 30, Markson02 further discloses the method of claim 29, wherein the map is configured as a flat file that is converted into a tree structure (Markson02, [0083]-[0084], convert the mapping of HTML script file into the UNIX tree file system) and including the step of using the tree structure to verify the accuracy of the information related to the volume group and the other logical information (Markson02, [0089], [0094], for example, in the table, each row is associated with information of a logical unit of storage).
 5. Regarding claim 31, Markson02 further discloses the method of claim 30, wherein the tree structure is converted back into a map that is sent to a second computer system having a second operating system (Markson01, col.6, l.8-25, fig. 3B - by the mirroring procedure).
 6. Regarding claim 32, Markson02 further discloses the method of claim 31, Including the step of building a second volume group on the second computing system that is a substantially a copy of the first volume group on the first computing system (Markson02, [0106]).
 7. Regarding claim 33, Markson01 further discloses the method of claim 32, including the step of :

- Establishing one or more mirrored copies of data that are copies of one or more volumes of data that are part of the first volume group (Markson01, col. 6, l.14-25); and
 - separating the one or more mirrored copies of data from the respective one or more volumes of data (Markson01, col. 6, l.14-25).
8. Regarding claim 34, Markson further discloses the method of claim 33, including the step of mounting the separated one or more copies of data on the first or second computer system using the second volume group (Markson02, [0084]-[0086]).
9. Regarding claim 35, Markson02 further discloses the method of claim 34, wherein the first and second computer system are combined (Markson02, [0118], in which it disclose the combination of network attached storage and direct attached storage system).
10. Regarding claim 36, Markson02 further discloses the method of claim 34, further comprising the compute-executed the step of : dismounting the separated one or more mirrored copies from the second computer system (Markson02, [0171]).
11. Regarding claim 37, Markson02 further discloses the method of claim 33, including the step of: backing up the separated one or more copies of data to a backup system (Markson02, [0168]).
12. Regarding claim 38, Markson02 further discloses the method of claim

- 37, including the step of: restoring one or more volumes of data from the backup medium of from the one or more mirrored copies of data that are copies of the one or more volumes of data (Markson02, [0168]-[0169]).
13. Regarding claim 39, Markson02 further discloses the method of claim 33, wherein the respective one or more volumes of data that are part of a first volume group on the first computer system are further associated with a first software application (Markson02, [0138]).
14. Regarding claim 40, Markson02 further discloses the method of claim 39, wherein a second software application is provided on the second computer system and the separated one or more mirrored copies of data on the second computer system are associated with the second software application (Markson02, [0152]).
15. Regarding claim 41, Markson01 further discloses the method of claim 40, including the step of: backing up the separated one or more copies of data to a backup medium (Markson01, col.3, l.10-25).
16. Regarding claim 42, Markson01 further discloses the method of claim 41, wherein the second software application has an associated database and the step of backing up the separated one or more copies of data to a backup medium includes backing up the associated database (Markson01, col.4, l.54-65, fig. 1).
17. Regarding claim 43, Markson01 further discloses the method of claim

42, wherein there is a set of information associated with the database, the set of information comprising at least one type of information selected from the group consisting of table spaces, archive logs, redo logs, and control file and wherein at least some of the set of information associated with the database is backed up to the backup during the backup step (Markson01, col.5, l.18-28).

18. Regarding claim 44 has similar limitations as claims 43.

Therefore, claim 44 is rejected under Markson for the same reason set forth in the rejection of claim 43.

19. Regarding claims 45-55 have similar limitations as claims 28-38.

Therefore, they are rejected under Markson for the same reason set forth in the rejection of claims 28-38.

20. Regarding claim 56, has similar limitations as claims 28, and 33.

Therefore, claim 56 is rejected for the same reason set forth in the rejection of claims 28, and 33.

21. Regarding claim 57, Markson02 further discloses the program product of claim 56, wherein the map further comprises: information identifying the one or more separated mirrored copies of the data; and information identifying the physical address of the mirrored copies (Markson02, [0111], [0112]).

22. Regarding claim 58, Markson02 further discloses the program product of claim 56, wherein the first operating system is different from the

- second operating system (Markson02, [0083], [0084], Window, Linux are two different operating system).
23. Regarding claims 59-63 they are not be able reviewed because they are depended on the canceled claim 1.
24. Regarding claim 64, Markson02 further discloses the method of claim 33, wherein the map further comprises: information identifying the one or more separated mirrored copies of the data; and information identifying the physical address of the mirrored copies (Markson02, [0111], [0112]).
25. Regarding claim 65, Markson02 further discloses the method of claim 45, wherein the first operating system is different from the second system (Markson02, [0083], [0084], Window, Linux are two different operating system).
26. Regarding claim 66, Markson02 further discloses the method of claim 45, wherein the first operating system is substantially the same as the second system (Markson02, [0084], Solaris, UNIX, Linux are two substantially the same operating system).
27. Regarding claim 67, Markson02 further discloses the method of claim 45, wherein the first operating system is a separate and distinct computer system from the second computer system (Markson02, [0084], Solaris, and Markson01, col.6, l.1-4, that indicates the HP-UX, and Solaris are two different computer system).

28. Regarding claim 68, Markson02 further discloses the method of claim 50, wherein the map further comprises: information identifying the one or more separated mirrored copies of the data; and information identifying the physical address of the mirrored copies (Markson02, [0111], [0112]).

Claim Objections

1. Claims 59-63 objected to under 37 CFR 1.75(c), as being of improper dependent form (e.g. depends on the canceled claim 1) for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kelvin Lin whose telephone number is 571-272-3898.

The examiner can normally be reached on Flexible 4/9/5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on 571-272-3868. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2142

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

1/16/07
KYL

A handwritten signature in black ink, appearing to read "Andrew Caldwell". The signature is fluid and cursive, with the first name "Andrew" and last name "Caldwell" clearly distinguishable.

ANDREW CALDWELL
SUPERVISORY PATENT EXAMINER